



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/542,776

07/20/2005

Bernd Wenderoth

4372-09

8862

23117

7590

06/09/2009

NIXON & VANDERHYE, PC  
901 NORTH GLEBE ROAD, 11TH FLOOR  
ARLINGTON, VA 22203

EXAMINER

STANLEY, JANE L

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

06/09/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/542,776	<b>Applicant(s)</b> WENDEROTH ET AL.	
	<b>Examiner</b> JANE L. STANLEY	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 19-25 and 27-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-25 and 27-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

Applicant's reply filed **5 March 2009** has been fully considered. **Claims 19-25 and 27-40** are pending; **claims 1-18 and 26** are cancelled, **claim 19** is amended and **claims 20-25 and 27-40** are as previously presented.

### *Claim Rejections - 35 USC § 103*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 19-25 and 27-36** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tachiiwa et al. (EP 0 299 942) in view of Oppenlaender et al. (US 5,064,552).

**Regarding claims 19-25, 27-33**, Tachiiwa et al. teaches an anti-freeze composition comprising glycols (pg 3 ln 44) i.e. ethylene glycol, propylene glycol, butylene glycol, and glycerol (page 3 ln 44-45); 0.05 to 5 wt% silicates (pg 5 lns 56 and 60; this overlaps instant 0.005 to 3% silicates); mercaptobenzothiazole (pg 5 ln 61), methylbenzotriazole and benzotriazole (pg 6 ln 2) present in 0.3, 0.2 and 0.1 wt%, respectively (see Examples 1-6, Table 1, pg 8; this overlaps instant 0 to 3 wt%, 0.01 to 3 wt%, and 0.05 to 1 wt% of hydrocarbon-triazoles and hydrocarbon-thiazoles); 0.1 to 1 wt% sodium molybdate (pg 4 ln 27-28; this overlaps instant 0 to 5 wt% alkali metal molybdates); 0.01 to 0.1 wt% copolymers of maleic acid and acrylic acid 9pg 5 ln 5-6 and ln 54; this overlaps instant 0 to 1 wt% polymeric hard water stabilizers); magnesium

Art Unit: 1796

salts, i.e. magnesium citrate (pg 4 ln 4-14); and a pH of from 6.5 to 9 (this overlaps with instant pH of from 6 to 11). Tachiiwa et al. further teaches against the use of borates, specifically borax (pg 1 ln 57-58; see also Table 2 Examples).

Tachiiwa et al. teaches that triethylamine, diethanolamine, monoethanolamine, triisopropanolamine, diisopropanolamine, and monoisopropanolamine are known/used as corrosion proofing agents in antifreeze compositions (pg 2 ln 42-46) (instant amines of formula (I),  $R^1$  to  $R^3$  selected from the Markush groups of instant **claims 22-23** and amine carrying an alkyl radical having at least one hydroxyl substituent, **claim 24**), but does not specifically teach them as present in the antifreeze composition of Tachiiwa et al.. Tachiiwa et al. also teaches the presence of 0.1 to 5 wt% of phosphoric acid compounds (pg 3 ln 52-56). Furthermore, Tachiiwa et al. teaches phosphoric acid and the above amine compounds to be equivalent corrosion proofing agents (page 2 ln 42-46). In view of the recognition of Tachiiwa et al. that triethylamine, diethanolamine, monoethanolamine, triisopropanolamine, diisopropanolamine, and monoisopropanolamine are equivalent and interchangeable corrosion proofing agents with phosphoric acid compounds in antifreeze compositions, it would have been obvious to one of ordinary skill in the art to substitute the phosphoric acid compounds with the above mentioned amine compounds and arrive at the instant invention. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable (See *In re Ruff* 118 USPQ 343 (CCPA 1958); MPEP 2144.06).

Art Unit: 1796

Tachiwa et al. does not teach the silicates to be stabilized. Oppenlaender et al. teaches a glycol-based antifreeze composition comprising corrosion-inhibiting additives (abstract: i.e. benzotriazole or tolutriazole, col 2 ln 15-16) and stabilized silicate (abstract) wherein said silicates are alkali silicates (component b, col 2 ln 3-11) stabilized with phosphorus silicon compounds (instant organosiliconphosphonates) (pg 2 ln 62-65) and/or corresponding to disclosed formula IV (instant orthophosphates) (col 3). Tachiwa et al. and Oppenlaender et al. are analogous art because they are concerned with the same field of endeavor, namely glycol-based antifreeze concentrates containing corrosion inhibitors and silicate compounds. At the time of the invention a person having ordinary skill in the art would have found it obvious to use the stabilized silicates of Oppenlaender et al. in the composition of Tachiwa et al. and would have been motivated to so do in order to obtain antifreeze compositions with improved corrosion resistance in both dilute and undiluted, i.e. concentrated, form (Oppenlaender et al., col 4 ln 41-42).

Furthermore, the recitation that the basic formulation containing said glycols, aliphatic amines, stabilized silicates, corrosion inhibitors, molybdates and polymeric hard water stabilizers is to be used for solar plants does not confer patentability to the claims since the recitation of an intended use does not impart patentability to otherwise old compounds or compositions. (See: *In re Tuominen*, 671 F.2d 1359, 213 USPQ 89 (CCPA 1982); *In re Schreiber*, 44 USPQ 2d 1429, (Fed. Cir. 1997)).

**Regarding claim 34-36**, Tachiwa et al. in view of Oppenlaender et al. makes obvious the anti-freeze composition as set forth above. Tachiwa et al. further teaches

Art Unit: 1796

the glycol to be present as the main ingredient wherein the glycol to water ratio of the concentrated composition is from 99:1 to 80:20 (page 3 lns 49-50). More specifically Tachiwa et al. teaches the glycol component to be used either singly or in combination and further teaches examples wherein the glycol amount is greater than 75 wt% (95 wt%, see Examples). Tachiwa et al. further teaches the glycol used can be selected from propylene glycol (pg 3 ln 44).

**Claims 37-40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tachiwa et al. (EP 0 299 942) in view of Oppenlaender et al. (US 5,064,552) as applied to **claim 19 and 36** above, and further in view of Smith (US 4,117,682).

Tachiwa et al. in view of Oppenlaender et al. makes obvious the antifreeze composition as set forth in **claims 19 and 36** above. Tachiwa et al. further teaches use of the antifreeze compositions in internal combustion engines (pg 2 ln 11-13).

Tachiwa et al. does not teach a method of transferring heat in a solar plant. However, Smith teaches the use of glycol-based, i.e. triethylene glycol, liquids as a heat transfer media wherein said glycol flows through, i.e. is in contact with, the double paned windows, i.e. glass, of the solar collector system (see Figures 6 and 9; col 3 ln 43-47 and 57-59; col 7 ln 4-7 and 11-27). Smith and Tachiwa et al. are analogous art because they are concerned with the same field of endeavor, namely the use of glycol-based liquids as heat-transfer agents. At the time of the invention a person having ordinary skill in the art would have found it obvious to have combined the method of

Art Unit: 1796

flowing glycol through double paned windows in solar collector systems as taught by Smith in the invention of Tachiwa et al. and would have been motivated to do so in because such glycol coolants have an index of refraction close to that of the window panes and will not absorb energy from the sun (Smith, col 7 ln 16-18).

### ***Response to Arguments***

The objection to **claims 19-40** for minor informalities is withdrawn as a result of Applicant's amendments to **claim 19**.

The 35 U.S.C. 103(a) rejection of **claims 19-24 and 28-36** as unpatentable over Tachiwa et al. (EP 0 299 942) is withdrawn as a result of Applicant's amendments to **claim 19**. Furthermore, the 35 U.S.C. 103(a) rejection of **claims 25-27** as unpatentable over Tachiwa et al. in view of Oppenlaender et al. (US 5,064,552) is withdrawn as a result of Applicant's amendments to **claim 19** and cancellation of **claim 26**. However, please note the above rejection of **claims 19-25 and 27-36** as unpatentable over Tachiwa et al. in view of Oppenlaender et al. (US 5,064,552)

Applicants argue that as the intended use of the compositions of Tachiwa et al. is as an antifreeze fluid for automobiles and as the intended use of the instant invention is for use in solar plants then Tachiwa et al. and the instant invention are nonanalogous art (Arguments page 6-7). In response to applicant's argument that Tachiwa et al. is nonanalogous art, it has been held that a prior art reference must either be in the field of

Art Unit: 1796

applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Tachiwa et al. is analogous art with the instant invention as they are both concerned with the same field of endeavor, namely glycol-based heat-transfer fluids.

Applicant's have attempted to separate the instantly claimed composition from that taught by the prior art by inclusion of an intended use statement (Arguments page 6-7). In response to applicant's argument that the "heat transfer liquid concentrate" is "for solar plants", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Further, the recitation that the basic formulation containing said glycols, aliphatic amines, stabilized silicates, corrosion inhibitors, molybdates and polymeric hard water stabilizers is to be used for solar plants does not confer patentability to the claims since the recitation of an intended use does not impart patentability to otherwise old compounds or compositions. (See: *In re Tuominen*, 671 F.2d 1359, 213 USPQ 89 (CCPA 1982); *In re Schreiber*, 44 USPQ 2d 1429, (Fed. Cir. 1997)).

Applicants further argue that the compositions of Tachiwa et al. inhibit corrosion of aluminum alloys and other metal materials (Arguments, page 6-7, specifically (i)) while the instant invention inhibits glass corrosion. However, Tachiwa et al. teaches



Art Unit: 1796

glycol-based heat-transfer fluids comprising the instantly claimed glycols, aliphatic amines, corrosion inhibitors, molybdates, and polymeric hard water stabilizers, and furthermore Tachiiwa et al. in view of Oppenlaender et al. makes obvious the instantly claimed stabilized silicates in glycol-based heat-transfer fluids. As the compositions made obvious by Tachiiwa et al. in view of Oppenlaender et al. are the instantly claimed composition, it is implicit that they would have the same properties, in other words, are capable of inhibiting glass corrosion, absent evidence to the contrary.

It is further noted that Applicant's arguments regarding the "the problem to be solved by the present invention is the inhibition of glass corrosion in solar plants, in which the heat transfer liquid is directly in contact with glass" are not commensurate with the scope of the claims. Applicant's instant claims do not contain the recitation that the compositions inhibit glass corrosion. However, should they be amended to do so, it is noted that such would amount to nothing more than an inherent/implicit property, as set forth above (Arguments, page 7, (i) and page 8). In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., glass corrosion inhibition) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's allege that Tachiiwa et al. teaches away from the instant invention because Tachiiwa et al. teaches phosphoric acid as a mandatory compound (Arguments, page 9 (ii)). It is noted that Applicant's instant claims contain the open

Art Unit: 1796

claim language of “comprising”. Furthermore, Tachiiwa et al. teaches that phosphoric acid is an art recognized corrosion proofing agent equivalent to amine compounds including triethylamine, diethanolamine, etc. (page 2 ln 42-46). While the examples of Tachiiwa et al. suggest that phosphoric acid is mandatory to the invention of Tachiiwa et al., it is also taught that the phosphoric acid is interchangeable with the previously stated amine compounds. It would have been obvious to one of ordinary skill in the art to substitute the phosphoric acid compounds with the amine compounds and arrive at the instant invention without undue experimentation. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known in the prior art, the substitution of one equivalent for another is not patentable (*In re Ruff*, 118 USPQ 343 (CCPA 1958); MPEP 2144.06).

Applicants argue that Oppenlaender et al constitutes a teaching away as the composition of Oppenlaender et al. comprises borates (Arguments page 10 (iii)). The Examiner disagrees as Oppenlaender et al. was relied upon only to teach that in glycol-based antifreeze compositions containing silicates, it is known in the art to stabilize the silicates with phosphorus silicon compounds (instant orgaosiliconphosphonates) (Oppenlaender et al., col 2 ln 62-65; col 3 formula IV) and as such it would have been obvious to one of ordinary skill in the art to so stabilize the silicates of Tachiiwa et al. for the purpose of obtaining a composition with improved corrosion resistance in both dilute and undiluted forms (Oppenlaender et al, col 4 ln 41-42).

The 35 U.S.C. 103(a) rejection of **claims 37-40** as unpatentable over Tachiiwa et al. in view of Smith (US 4,117,682) is withdrawn as a result of Applicant's amendments to **claim 19**. However, please note the above rejection of **claims 37-40** as unpatentable over Tachiiwa et al. in view of Oppnlaender et al. and further in view of Smith.

As set forth above, Tachiiwa et al. is analogous art with the instant invention as both are directed to glycol based heat-transfer compositions (Arguments page 10 (iv)). Furthermore, Tachiiwa et al. and Smith are analogous art because they are both concerned with glycol-based heat-transfer fluids and uses thereof. As Smith teaches glycol-based heat-transfer fluids are useable in solar plants and as Tachiiwa et al. teaches glycol-based heat-transfer fluids, it would have been obvious to one of ordinary skill in the art to use the Tachiiwa et al. compositions in the manner disclosed by Smith because such glycol coolants have an index of refraction close to that of the window panes and will not absorb energy from the sun (Smith, col 7 ln 16-18).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

Art Unit: 1796

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANE L. STANLEY whose telephone number is (571)270-3870. The examiner can normally be reached on Monday-Thursday, 7:30 am - 5 pm, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/  
Supervisory Patent Examiner, Art Unit 1796

/JLS/